

## CLAIMS

- 1        1. (*previously presented*) A computer system comprising:  
2            a simulator including:  
3              a virtual-failure event selector providing for selecting a virtual-  
4              failure event corresponding to a real-failure event that applies to a  
5              real computer cluster, and  
6              a virtual-cluster generator for generating a first virtual cluster in  
7              a virtual pre-failure configuration corresponding to a real pre-failure  
8              configuration of said real computer cluster, and for, in response to  
9              selection of said virtual-failure event, generating a second virtual  
10             cluster in a virtual post-failure configuration corresponding to a real  
11             post-failure configuration that said real computer cluster would  
12             assume in response to said real-failure event.
  
- 1        2. (*previously presented*) A system as recited in Claim 1 wherein,  
2            in said real pre-failure configuration, said real computer cluster  
3            runs a software application on a first computer of said real  
4            computer cluster and not on a second computer of said real  
5            computer cluster, and wherein, in said real post-failure  
6            configuration, said real computer cluster runs said application on  
7            said second computer but not on said first computer.
  
- 1        3. (*original*) A system as recited in Claim 1 further comprising  
2            said real computer cluster, said real computer cluster including  
3            profiling software for providing a descriptive profile of said real  
4            computer cluster, said virtual-cluster generator generating said  
5            virtual cluster in said pre-failure configuration using said  
6            descriptive profile.

1       4. *(original)* A system as recited in Claim 3 wherein said real  
2 computer cluster is connected to said simulator for providing said  
3 descriptive profile thereto.

1       5. *(original)* A system as recited in Claim 2 wherein said  
2 simulator further includes an evaluator for evaluating said virtual  
3 cluster in its post-failure configuration.

1       6. *(original)* A system as recited in Claim 5 wherein said  
2 simulator further includes a test sequencer, said test sequencer  
3 selecting different virtual-failure events to be applied to said first  
4 virtual cluster in said pre-failure configuration so as to result in  
5 different post-failure configurations of said virtual cluster.

1       7. *(original)* A system as recited in Claim 6 wherein said  
2 simulator further includes a statistical analyzer for statistically  
3 analyzing evaluations of said different post-failure configurations of  
4 said virtual cluster.

1       8. *(original)* A system as recited in Claim 7 wherein said test  
2 sequencer automatically tests different pre-failure configurations of  
3 said virtual cluster against different failure events, said statistical  
4 analyzer providing a determination of optimum pre-failure  
5 configuration by statistically analyzing evaluations of the resulting  
6 post-failure configurations.

1       9. *(original)* A system as recited in Claim 8 wherein said  
2 simulator is connected to said real computer cluster for providing  
3 said determination thereto, said real computer cluster automatically  
4 reconfiguring itself as a function of said determination.

1        10. (*previously presented*) A computer-implemented method  
2 comprising:

3            a) generating a first virtual computer cluster in a virtual pre-  
4 failure configuration that serves as a model for a real computer  
5 cluster in a pre-failure configuration that responds to  
6 predetermined types of failures by reconfiguring to a real post-  
7 failure configuration, said reconfiguring including migrating a real  
8 application on one real computer of said real computer cluster to  
9 another real computer of said real computer cluster;  
10          b) selecting a sequence of at least one of said predetermined  
11 types of failures; and  
12          c) generating a second virtual computer cluster in a virtual post-  
13 failure configuration that serves as a model for said real computer  
14 cluster in said real post-failure configuration.

1        11. (*original*) A method as recited in Claim 10 wherein steps a,  
2 b, and c are iterated for different configurations of said real  
3 computer cluster and for different sets of said predetermined  
4 failure types, said method further comprising providing a  
5 recommended configuration for said real computer cluster.

1        12. (*original*) A method as recited in Claim 10 further  
2 comprising:  
3            gathering profile information about said real cluster in said first  
4 configuration, wherein said first virtual computer cluster is  
5 generated using said profile information.

1        13. (*original*) A method as recited in Claim 12 wherein steps a,  
2 b, and c are iterated for different configurations of said real  
3 computer cluster and for different sets of said predetermined  
4 failure types, said method further comprising providing a  
5 recommended configuration for said real computer cluster.

1        14. (*original*) A method as recited in Claim 13 further  
2 comprising:  
3            transmitting said recommendation to said real computer cluster;  
4 and  
5            implementing said recommended configuration on said real  
6 computer cluster.

1        15. (*new*) A method as recited in Claim 10 wherein said type of  
2 failure relates to a failure of a network interface or a hard disk  
3 interface.

1        16. (*new*) A method as recited in Claim 1 wherein said real  
2 failure event involves a failure of a network interface or a hard disk  
3 interface.